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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/644,748	08/21/2003	James I. Livingstone	A894629US	7635
23971	7590	07/05/2006	EXAMINER	
BENNETT JONES C/O MS ROSEANN CALDWELL 4500 BANKERS HALL EAST 855 - 2ND STREET, SW CALGARY, AB T2P 4K7 CANADA			STEPHENSON, DANIEL P	
			ART UNIT	PAPER NUMBER
			3672	
DATE MAILED: 07/05/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/644,748	Applicant(s) LIVINGSTONE, JAMES I.	
	Examiner Daniel P. Stephenson	Art Unit 3672	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 10 April 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-26 and 28-65 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10, 12-26, 28-30, 32-47, 49-57 and 59-65 is/are rejected.
- 7) ☒ Claim(s) 11, 31, 48 and 58 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 October 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Terminal Disclaimer*

1. The terminal disclaimer filed on 4/10/06 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of any patent granted on Application Number 10/644749 has been reviewed and is accepted. The terminal disclaimer has been recorded.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-9, 21, 23, 25, 26, 28, 29, 32, 42, 44-46, 54-56, 64 and 65 are rejected under 35 U.S.C. 102(e) as being anticipated by the pre-grant publication '111 to Pia (hereafter Pia '111). Pia '111 discloses a method and apparatus for drilling a direction or horizontal wellbore comprising providing a concentric drill string consisting essentially of an inner pipe (26) and an outer pipe (24) and an annulus between the pipes; connecting a bottomhole assembly comprising a directional drilling means (32) and a MWD tool (30) to the concentric drill string and delivering drilling medium through one of the annulus or inner pipe to the directional drill means (Fig. 8C and 8G) and removing exhaust drilling medium by extracting the exhaust drilling medium through the other of the annulus or inner pipe. The directional drilling means is a reverse circulation drilling means since it is disclosed as drilling in both circulation directions.

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Hydrocarbons will inherently be extracted with the drilling fluid if the drill enters a hydrocarbon bearing formation. There is a seal located at the bottom of the drill string between the wellbore wall and the outer tubular. This seal has been broadly read to be a flow control means for not allowing drilling fluid to pass into the annulus; also it is being broadly interpreted to be a “shroud” means. There is a seal located at the top of the outer drill string between the wellbore wall and the outer tubular. This seal has been broadly read to be a flow control means for not allowing drilling fluid to pass into the annulus.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 10, 20, 22, 24, 30, 41, 43, 47 and 57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pia ‘111 in view of Johnson ‘431. Pia ‘111 shows all the limitations of the claimed invention, except it does not disclose that there is a flow control means near the surface of the wellbore that has a discharge means for removing the drilling fluid from the wellbore. It also does not disclose that there is a venturi for accelerating the drilling fluid to facilitate its removal. It also does not disclose that there is a suction type compressor for removing the drilling fluid or that there is an interchange means for directing the drilling fluid. Johnson ‘431 (Fig. 1A, 2A) discloses a dual wall drill string with a flow control means near the surface of the wellbore that has a discharge means (19b) for removing the drilling fluid from the wellbore. There is a venturi (V) for accelerating the drilling fluid to facilitate its removal. The Venturi is a

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suction type compressor for removing the drilling fluid. There is an interchange means (139) for directing the drilling fluid. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the direction, vacuum and discharge means of Johnson with the apparatus and method of Pia '111. This would be done because it is common knowledge in the wellbore art to use air as a drilling fluid which would benefit from the use of vacuum suction and discharge.

6. Claims 12, 14-19, 22, 33, 34, 36-40, 50-52, 59-62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pia '111 in view of Lee '403. Pia shows all the limitations of the claimed invention, except it does not disclose that there is a bent sub attached to the drill string. It also does not disclose that air is the drilling fluid. It also does not disclose that the drilling means is a reciprocating air hammer. Lee discloses the drill medium comprises air (page 2, line 51-59) and the direction drilling means comprises a reverse circulating reciprocating air hammer, a drill bit (page 4, lines 55-61) and a bent sub (35). There is also a reverse circulating steer able downhole air motor (page 4, lines 55-61). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the air drilling apparatus of Lee '403 with the apparatus and method of Pia '111. This would be done to provide an alternative cutting method based on formation characteristics.

7. Claims 13, 35, 49, 53 and 63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pia' 111 in view of Lee '403 and Johnson. Pia '111 shows all the limitations of the claimed invention, except it does not disclose that there is a bent sub, nor does it disclose that there is a drilling means powered by a rotary table or a top drive. Lee '403 discloses a dual shaft drill system with a bent sub. Johnson discloses a rotary table drilling system. It would have been

obvious to one of ordinary skill in the art at the time the invention was made to use the bent sub of Lee '403 with the drilling system of Johnson on the apparatus of Pia '111. This would be done to provide various cutting and directional structures to provide the most economical drill in whatever formation being drilled.

***Allowable Subject Matter***

8. Claims 11, 31, 48 and 58 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Response to Arguments***

9. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***


10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Heller shows similar features to the claimed invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel P. Stephenson whose telephone number is (571) 272-7035. The examiner can normally be reached on 8:30 - 5:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David J. Bagnell can be reached on (571) 272-6999. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
David Bagnell  
Supervisory Patent Examiner  
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DPS *PPS*